# REMARKS

## I. Status of Claims

Claims 1, 2, 9, 10, 11, 19 and 24 have been amended.

Claims 1-25 remain pending in the application.

In the Office Action, the Examiner rejected claims 1-4, 6-13 and 15-24 under 35 U.S.C. §103(a) as being unpatentable over U.S. Publication No. 2005/0020219 to Sih et al. in view of U.S. Patent No. 6,999,778 to DiBuduo.

Claims 5, 14 and 25 were allowed.

## II. Claim Rejections – 35 U.S.C. § 103(a)

The Examiner rejected claims 1-4, 6-13 and 15-24 under 35 U.S.C. §103(a) as being unpatentable over Sih et al. in view of DiBuduo. The rejection is respectfully traversed.

With respect to independent claim 1, the alleged combination of Sih et al. and DiBuduo does not disclose or teach all the elements of the claimed invention. Particularly, Sih et al. and DiBuduo do not disclose or teach a mobile terminal apparatus for acquiring a phase of a pseudo-random noise (PN) sequence at a mobile terminal that is acquired from a signal received from a base station in a mobile communication system, the apparatus comprising "a first energy measurer for measuring energy of an early path and a late path from an acquired PN sequence; a first normalizer for normalizing energy of the first energy measurer with an energy measured by the second energy measurer; and a third energy measurer for tracking a phase of the PN sequence using the normalized energy from the first normalizer," as recited in amended claim 1.

Sih et al. discloses a receiver portion of a wireless communication device that comprises demodulation fingers that include a PN sequence generator, a PN despreader, a

traffic channel decoder, a velocity responsive pilot channel decoder a pilot filter and a data demodulator (see paragraph [0057]). Each demodulation finger receives a baseband signal set and a velocity estimate signal from a velocity estimator (see paragraph [0055]). The velocity estimator comprises a power calculation module that computes a sum of squares of each sequence within a filtered sequence set and calculates a square root of this sum. The power calculation module outputs an instantaneous power as energy sequence. Sih et al. merely discloses measuring an instantaneous power as energy sequence. The Office Action relies on a purported disclosure in DiBuduo, since there is nothing in Sih et al. that discloses a first energy measurer for measuring energy of an early path and a late path from an acquired PN sequence.

DiBuduo, however, does not overcome at least the above-noted deficiencies of Sih et al. DiBuduo discloses a mobile station in a mobile communications device that detects and correlates a multipath signal at PN phase offset $t_{PH}B_1A_R$ or at PN phase offsets $t_{PH}B_1A_R$ or $t_{PH}B_2A_R$. Also, the mobile station disclosed in DiBuduo may detect base station's pilot signal at both **PN phase offset** $t_{PH}B_1A_R$ or $t_{PH}B_2A_R$ and decides which PN phase offset to report to a position determination entity (PDE) (see col. 6, line 48 – col. 7, line 1). The PDE, in turn, creates a statistical database (e.g., of pilot energy measurements associated with **PN phase offset measurements reported by various mobile stations** as described at col. 10, lines 63-65 of DiBuduo). Thus, there is nothing in DiBuduo that discloses or teaches measuring **energy** of an early path and a late path from an **acquired PN sequence at a mobile station** as recited in amended claim 1.

Sih et al. also discloses a normalizing factor module that receives a RMS power sequence calculated from a RMS power calculation module and calculates a normalizing factor. The normalizing factor is sent a multiplication node, which also receives delayed energy sequence from a queue. The multiplication node multiples the inputs and generates a normalized sequence. The normalized sequence represents a delayed energy sequence

normalized by one-half of RMS power sequence (see paragraphs [0133] – [0134]). Since Sih et al. does not disclose a first energy measurer that measures energy of an early path and a late path from an acquired PN sequence, the normalizing factor module of Sih et al. does not normalize **energy of the first energy measurer**. Moreover, there is nothing in Sih et al. that discloses normalizing energy with an instantaneous power calculated by the power calculation module. Likewise, DiBuduo does not supply at least the above-noted deficiencies of Sih et al.

Sih et al. further discloses that each demodulation finger identifies and tracks a distinct signal pairing from the baseband signal set, in which the signal pairing comprises a pilot signal component and a time-aligned traffic signal component (see paragraph [0052]-[0053]). However, the demodulation finger does not track the distinct signal pairing from the baseband signal set by using **the normalized energy from the first normalizer**. Likewise, DiBuduo does not supply at least the above-noted deficiencies of Sih et al.

In view of the above arguments, the alleged combination of Sih et al. and DiBuduo does not disclose or teach the claimed elements of independent claim 1. Therefore, the rejection of claim 1 should be withdrawn. Claim 10, which recites "measuring by a first energy measurer a first energy comprising energy of an early path and a late path from an acquired PN sequence; normalizing by a first normalizer the first energy with the second energy; and tracking a phase of the PN sequence using the normalized energy value," should also be withdrawn at least based on the above arguments to claim 1. The rejection of dependent claims 2-4 and 6-9, and 11-13 and 15-18, which incorporate the limitations of their base claims 1 and 10, respectively, should also be withdrawn at least based on the above arguments.

With respect to independent claim 19, the alleged combination of Sih et al. and DiBuduo does not disclose or teach "a switch for selecting a local PN sequence generator so

that energy values of an early path and a late path can be measured for the phase of the acquired PN sequence; a first energy measurer for calculating an energy value of a path selected by the switch; a first normalizer for normalizing energy measured by the first energy measurer with an energy measured by the second energy measurer; and a third energy measurer for tracking a phase of the PN sequence using the normalized energy from the first normalizer," as recited in amended claim 19.

Sih et al. discloses a PN sequence generator that generates a PN sequence set. However, there is nothing in Sih et al. that discloses a **switch** for selecting a local PN sequence generator so that energy values of an **early path and a late path** can be measured for a phase of the acquired PN sequence. Moreover, there is nothing in Sih et al. that discloses or teaches a first energy measurer for calculating an energy value of a path selected by the switch. Likewise, DiBuduo does not supply at least the above-noted deficiencies of Sih et al.

As discussed above, Sih et al. also discloses a normalizing factor module that receives a RMS power sequence calculated from a RMS power calculation module and calculates a normalizing factor. The normalizing factor is sent a multiplication node, which also receives delayed energy sequence from a queue. The multiplication node multiples the inputs and generates a normalized sequence. The normalized sequence represents a delayed energy sequence normalized by one-half of RMS power sequence (see paragraphs [0133] – [0134]). Since Sih et al. does not disclose a first energy measurer for calculating an energy value of a path selected by the switch, the normalizing factor module of Sih et al. does not normalize **energy measured by the first energy measurer**. Moreover, there is nothing in Sih et al. that discloses normalizing energy with an instantaneous power calculated by the power calculation module. Likewise, DiBuduo does not supply at least the above-noted deficiencies of Sih et al.

Sih et al. further discloses that each demodulation finger identifies and tracks a distinct signal pairing from the baseband signal set, in which the signal pairing comprises a pilot signal component and a time-aligned traffic signal component (see paragraph [0052]-[0053]). However, the demodulation finger does not track the distinct signal pairing from the baseband signal set by using **the normalized energy from the first normalizer**. Likewise, DiBuduo does not supply at least the above-noted deficiencies of Sih et al.

In view of the above arguments, the alleged combination of Sih et al. and DiBuduo does not disclose or teach the claimed elements of independent claim 19. Therefore, the rejection of claim 19 should be withdrawn. The rejection of dependent claims 20-24, which incorporate the limitations of base claim 19, should also be withdrawn at least based on the above arguments.

Moreover, the Examiner has failed to establish a *prima facie* case of obviousness for combining Sih et al. and DiBuduo. According to M.P.E.P. § 2143, to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art to modify the reference or combine the reference teachings.

The first criterion is not met. Based on our review of Sih et al. and DiBuduo, we find no teaching or suggestion to support the Examiner's asserted motivation to combine the references because the Examiner has not established that either Sih et al. or DiBuduo discloses a first energy measurer for measuring energy of an early path and a late path from an acquired PN sequence at a mobile terminal. The detection and correlation of a multipath signal at PN phase offset $t_{PH}B_1A_R$ or at PN phase offsets $t_{PH}B_1A_R$ or $t_{PH}B_2A_R$ and the detection of base station's pilot signal at both **PN phase offset** $t_{PH}B_1A_R$ or $t_{PH}B_2A_R$, and the PDE statistical database of DiBuduo is not analogous to measuring **energy** of an early path and a late path from an acquired **PN sequence at a mobile terminal**. Accordingly, we

propose requesting that the Examiner provide a basis in fact and/or technical reasoning in the prior art for combining Sih et al. and DiBuduo.

## CONCLUSION

Applicants submit that such arguments are fully responsive to the Office Action dated July 5, 2006 and respectfully requests the asserted grounds of rejections be withdrawn based on such arguments.

In view of the above, it is believed that the above-identified application is in condition for allowance, and notice to that effect is respectfully requested. Should the Examiner have any questions, the Examiner is encouraged to contact the undersigned at the telephone number indicated below.

Respectfully submitted,

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